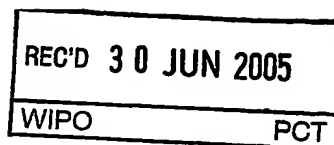


# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)





Applicant's or agent's file reference MP100317-WO	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/GB2004/000250	International filing date (day/month/year) 21.01.2004	Priority date (day/month/year) 19.03.2003
International Patent Classification (IPC) or national classification and IPC G01N31/22		
Applicant INEOS SILICAS LIMITED et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ sent to the applicant and to the International Bureau) a total of sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand  11.10.2004	Date of completion of this report  29.06.2005
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Michalitsch, R  Telephone No. +49 89 2399-2930 

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/000250

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-14 as originally filed

**Claims, Numbers**

1-33 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/000250

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-33
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-33
Industrial applicability (IA)	Yes: Claims	1-33
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

## Section V.

### 1. State of the Art. Reference is made to the following documents:

- D1: WO 00/65339 A
- D2: WO 02/057772 A
- D3: DATABASE WPI Section Ch, Week 8345 Derwent Publications Ltd., London,  
GB; Class J04, Page 2, AN 1983-813626  
& SU 989 479 A (LENINGRAD ZHDANOV UNIV), (1983-01-15)
- D4: DE 19 52 539 A

### 2. Inventive Step (Art. 33(3) PCT).

The arguments of the applicants were received and agreed upon insofar as the used bromide salt is basically not hygroscopic. Nonetheless the arguments as set out before and the objection with respect to a lacking inventive step (Art. 33(3)) is maintained.

#### 2.1. Independent claim 1.

Document D1 (WO0065339 A) is considered to represent the closest prior art. D1 discloses an indicating desiccant comprising a silica based material and a iron salt as the active indicating component.

-The **difference** between the characterizing features of D1 and claim 1 of the present application consists in the source of bromide added to the active indicating material.

-The **technical effect** of the distinguishing feature is seen in an enhanced sensitivity of the indication system in the presence of the bromide salt due to synergistic effects, such as an increase in the color contrast obtained in a given humidity range.

- The **technical problem** to be solved is consequently seen in the need for enhancing the color contrast of the iron indicating system known from the prior art.

- The use of synergistic salts, and bromides in particular is common in the art, since these salts are known to improve the performance of moisture indicating systems.

Furthermore, this synergistic effect has been explicitly shown for copper based water indicating systems in combination with bromides. The effects of the used salts being commonly based on a enhanced color contrasts obtained by the added salts. The person skilled in the art would starting from D1 and the above formulated problem add a synergistic salt to the iron based indicator. Furthermore the skilled person would be aware of D2 and use the teaching of the document to solve the above problem and so - or by trial and error - arrive at the subject matter of claim 1. However, none of these steps of the skilled person requires exercising an inventive skill.

**Therefore claim 1 lacks an inventive step, in breach of Art. 33(3) PCT.**

**Dependent Claims.**

**2.2. Claims 2 and 3** do not introduce inventive subject matter since the teaching of D1 implicitly points towards a copper free indicator composition.

**2.3. Claims 4-18** are directed towards the ratio of bromine relative to iron. However, none of the subject matter appears to provide a surprising technical effect nor a substantial contribution over the available prior art. **Therefore claims 4-18 are also regarded as lacking an inventive step in the sense of Art. 33(3) PCT.**

**2.4.** Related arguments also apply with respect to dependent **claims 19-28**, which add nothing inventive to the claim they depend on.

**2.5. Independent claim 29.**

In view of the arguments put forward under 2.1. and the teaching of D1 (e.g. claim 8) the method claimed in claim 29 also lacks an inventive step, in breach of Art. 33(3) PCT.

**2.6. Claims 30-33** are directed towards standard processes that the skilled person would apply according to the technical requirements of the indicating system. However, the choice and application of such steps do not require an inventive skill. **Therefore, claims 30-33 lack an inventive step, in breach of Art. 33(3) PCT.**

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